PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Lamacraft	Examiner:	UNKNOWN
Serial No.:	TO BE ASSIGNED	Group Art Unit:	TO BE ASSIGNED
Filed:	June 1, 2001	Docket No.:	930.326USW1
Title:	A RECEIVER AND METHOD OF RECEIVING FOR AN FDMA/TDMA RADIO SYSTEM		

CERTIFICATE UNDER 37 C.F.R. 1.10:
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The undersigned hereby certifies that this Transmittal Letter and the paper or fee, as described herein, are being deposited with the United States Postal Service 'Express Mail Post Office To Addressee' service under 37 CFR 1.10 and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231

By: Kari Arnold
Kari Arnold

PRELIMINARY AMENDMENT

Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Please enter the following preliminary amendment into the above-referenced application.

ABSTRACT

Please insert the attached abstract into the application as the last page thereof.

SPECIFICIATION

Please amend the specification on page 2, the second paragraph, the fifth line down starting with the word *filter* as follows. A clean copy of the entire paragraph is included below. A marked up copy of the amended paragraph is included in Appendix A.

The first receiver R1 comprises a first bandpass filter 12 which is arranged to filter out signals which fall outside the receive band in which the M available channels are located. The filtered output is input to a first low noise amplifier 14 which amplifies the received signals. The amplified signal is then passed through a second bandpass filter 16 which filters out any noise, such as harmonics or the like introduced by the first amplifier 14. The output of the second bandpass filter is connected to a mixer 18 which receives a second input from a local oscillator 20. The frequency of the output of the local oscillator 20 will depend on the frequency of the channel allocated to the particular receiver. The output of the second bandpass filter 16 is mixed with the output of the local oscillator 20 to provide a signal at an intermediate frequency IF, which is less than the radio frequency at which the signals are received. The intermediate frequency IF output by the mixer 18 of each receiver will be the same for all receivers and may, for example, be 180 MHz. For example, if the channel allocated to a given receiver has a frequency of 880 MHz then the local oscillator 20 of that receiver will be tuned to 700 MHz. On the other hand, if the channel allocated to a given receiver has a frequency of 900 MHz, then the local oscillator will be tuned to a frequency of 720 MHz.

CLAIMS

Please delete claims 1-15 as follows. Please enter claims 16-29 as follows. A clean copy of the entire set of claims is included below.

16. (NEW) A receiver comprising:

means for receiving a first plurality of signals at different frequencies at the same time;

means for generating a second plurality of signals at different frequencies in sequence;

a mixer for receiving, at the same time, the first plurality of signals at different frequencies and one of the second plurality of signals at a time, wherein the second plurality of signals are provided for receiving by the mixer in succession, said first plurality of signals being mixed with successive ones of the second plurality of signals; and

filter means for receiving signals output from said mixer, said filter means being arranged to provide a series of samples of the first plurality of signals at the same frequency, wherein each of the said samples are separated in time.

17. (NEW) A receiver as claimed in claim 16, wherein said mixer is arranged to produce a plurality of sets of samples, each set of samples comprising one sample for each of said first plurality of signals.

18. (NEW) A receiver as claimed in claim 16, wherein each of said first plurality of signals has a plurality of bits and the mixer is arranged to generate a set of samples in a period equal to or less than the period of one bit of said first plurality of signals.

19. (NEW) A receiver as claimed in claim 16, wherein said generating means comprises a direct digital synthesiser.

20. (NEW) A receiver as claimed in claim 16, wherein the generating means is arranged to generate each of said second plurality of signals in turn.

21. (NEW) A receiver as claimed in claim 16, wherein the generating means is arranged to generate signals and then to change the frequency thereof to provide said second plurality of signals.

22. (NEW) A receiver as claimed in claim 21, wherein the generating means comprise multiplier means for increasing the frequency of the generated signals to provide the second plurality of signals.

23. (NEW) A receiver a claimed in claim 21, wherein the generating means utilises harmonics of said generated signals to provide said second plurality of signals.

24. (NEW) A receiver as claimed in claim 21, wherein the generating means comprises means for adding said generated signals to a further signal to provide said second plurality of signals.

25. (NEW) A receiver as claimed in claim 16, wherein the first plurality of signals are reduced by said mixer so that the series of samples are at the same frequency.

26. (NEW) A receiver as claimed in claim 25, wherein the mixer comprises filter means for filtering out those of the plurality of first signals which after reducing are not at said same frequency.

27. (NEW) A base station incorporating a receiver as claimed in claim 16.

28. (NEW) A base station as claimed in claim 27, wherein a time division multiple access system is used by said base station.

29. (NEW) A method of receiving comprising the steps of:

receiving a first plurality of signals at different frequencies;

generating a second plurality of signals at different frequencies in sequence;

reducing the frequency of the first plurality of signals by mixing the first plurality of signals at different frequencies at the same time, and one of the second plurality of signals at a time wherein the second plurality of signals are received by the mixer in succession, said first plurality of signals being mixed with successive ones of the second plurality of signals; and

providing a series of samples by filtering of the first plurality of signals at the same frequency, each of said samples being separate din time.

REMARKS

The above preliminary amendment is made to insert an abstract page into the application, to amend the specification and to enter new claims 16-29.

Applicant respectfully requests that this preliminary amendment be entered into the record prior to calculation of the filing fee and prior to examination and consideration of the above-identified application.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicant's attorney of record, Michael B. Lasky at 952-912-0527.

Respectfully submitted,

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By: ______________________

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Appendix A
Marked Up Version of the Amended Specification

The first receiver R1 comprises a first bandpass filter 12 which is arranged to filter out signals which fall outside the receive band in which the M available channels are located. The filtered output is input to a first low noise amplifier 14 which amplifies the received signals. The amplified signal is then passed through a second bandpass filter [14] <u>16</u> which filters out any noise, such as harmonics or the like introduced by the first amplifier 14. The output of the second bandpass filter is connected to a mixer 18 which receives a second input from a local oscillator 20. The frequency of the output of the local oscillator 20 will depend on the frequency of the channel allocated to the particular receiver. The output of the second bandpass filter 16 is mixed with the output of the local oscillator 20 to provide a signal at an intermediate frequency IF, which is less than the radio frequency at which the signals are received. The intermediate frequency IF output by the mixer 18 of each receiver will be the same for all receivers and may, for example, be 180 MHz. For example, if the channel allocated to a given receiver has a frequency of 880 MHz then the local oscillator 20 of that receiver will be tuned to 700 MHz. On the other hand, if the channel allocated to a given receiver has a frequency of 900 MHz, then the local oscillator will be tuned to a frequency of 720 MHz.